CLAIMS

What is claimed:

1. An aqueous superabsorbent polymer paste comprising a blend of

a) from about 1 to about 5 wt % of superabsorbent polymer particles and

b) from about 95 to about 99 wt % of an aqueous water-soluble polymer solution.

2. An aqueous superabsorbent paste of claim 1 characterized in that the viscosity of the aqueous superabsorbent polymer paste will be from about 1000 mPa.s and to about 35, 000 mPa.s.

3. An aqueous superabsorbent paste of claim 1 characterized in that the aqeuous water-soluble solution has from about 0.5 to about 5% solid level.

4. An aqueous superabsorbent paste of claim 1 characterized in that it has an absorption capacity of 15 g/g dry weight or more.

5. An aqueous superabsorbent paste of claim 1 characterized in that it has an absorption capacity of 20 g/g dry weight or more.

6. An aqueous superabsorbent paste of claim 1 characterized in that it has a paste expansion in tap water of 40 ml or more.

7. An aqueous superabsorbent paste of claim 1 characterized in that it has a paste expansion in 0.9% saline composition of 20 ml or more.

8. An aqueous superabsorbent paste of claim 1 characterized in that it has a paste expansion in deionized water of 70 ml or more.

9. An aqueous superabsorbent polymer paste comprising a) a composition comprising from about 55 to about 99.9 wt.% of polymerizable unsaturated acid group containing monomers; and from about 0.001 to about 5.0 wt.% of internal crosslinking agent; wherein the composition has a degree of neutralization of more than about 20%; and b) from

about 95 to about 99 wt % of an aqueous water-soluble polymer solution having from about 0.5 to about 5% solid level.

10. An aqueous superabsorbent paste of claim 9 characterized in that the viscosity of the aqueous superabsorbent polymer paste will be from about 1000 mPa.s and to about 35,000 mPa.s.

11. A coated substrate comprising

a) a substrate material

b) an aqueous superabsorbent polymer paste comprising a blend of

i) from about 1 to about 5 wt % of superabsorbent particles and

ii) from about 95 to about 99 wt % of an aqueous water-soluble polymer solution.

12. A coated substrate of claim 11 characterized in that the viscosity of the aqueous superabsorbent polymer paste will be from about 1000 mPa.s and to about 35, 000 mPa.s.

13. A coated substrate of claim 11 characterized in that the aqeuous water-soluble solution has from about 0.5 to about 5% solid level.

14. A coated substrate of claim 11 wherein the substrate is selected from the group consisting of polyethylene, polypropylene, other polyolefins, polyamide, polyaramid, polyester, fiberglass, carbon, polyacrylic, rayon, cotton and wood pulp..

15. A coated substrate of claim 11 wherein the coated substrate has an absorption capacity of 15 g/g, dry weight basis.

16. A coated substrate of claim 11 wherein the coated substrate has an absorption capacity of 20 g/g, dry weight basis.

17. A coated substrate of claim 11 wherein the coated substrate has an absorption capacity of 25 g/g, dry weight basis.

18. A coated substrate of claim 11 wherein the superabsorbent particles comprise a composition comprising from about 55 to about 99.9 wt.% of polymerizable unsaturated acid group containing monomers; and from about 0.001 to about 5.0 wt.% of internal crosslinking agent; wherein the composition has a degree of neutralization of more than about 20%.

19. A method for making a coated substrate comprising

(a) preparing a dispersion comprising a particulate superabsorbent polymer and an aqueous water-soluble polymer solution;

(b) contacting a substrate with the dispersion to form a coating layer of the dispersion on the substrate; and

(c) heat curing the coating layer for a period of time sufficient to form a water swellable, semi-gel coating layer.

20. The method of claim 19 wherein the substrate is selected from the group consisting of polyethylene, polypropylene, other polyolefins, polyamide, polyaramid, polyester, fiberglass, carbon, polyacrylic, rayon, cotton and wood pulp.

21. A water swellable coating comprising an aqueous superabsorbent polymer paste comprising a dispersion of from about 1 to about 5 wt % of superabsorbent particles and from about 95 to about 99 wt % of an aqueous water-soluble polymer solution wherein the water swellable coating is capable of absorbing and retaining a large quantity of water having from about 0.5 to about 5%, preferably from about 1 to about 3% solid level.

22 The water swellable coating composition of claim 22 wherein the superabsorbent particles have a mean particle size from about 150 to about 800 microns.

23. A method of making an aqueous superabsorbent polymer paste, said method comprising

(a) preparing an aqueous solution of superabsorbent polymer, which is formed from at least one monomer, where the pre-superabsorbent polymer is capable upon being subjected to heating of becoming a superabsorbent polymer; and

(b) preparing a paste by thoroughly blending from about 1 to about 5 wt % of the superabsorbent polymer with from about 95 to about 99 wt % of an aqueous water-soluble polymer solution.

24. A method of claim 23 characterized in that the thermal subsequent treatment is effected within a range of from about 75C°. to about 200C°. when coating on a substrate.

25. A method for reducing the loss of circulation fluids into flow passages of a subterranean formation during well drilling, completion or work over operations, method comprising:

(a) directly introducing at the well-head into an effective amount of a dry, solid, water insoluble but gel-forming and water swellable aqueous superabsorbent polymer paste comprising a blend of a) from about 1 to about 5 wt % of superabsorbent particles and b) from about 95 to about 99 wt % of an superabsorbent polymer particles; which has a mean particle size in the range of about 300 microns to about 600 microns; and

(b) allowing the aqueous superabsorbent polymer paste to enter the lost circulation zone and allowing the aqueous superabsorbent polymer paste to remain in said zone to absorb the aforesaid weight of water and swell to the appropriate volume thereby sealing fissures and reducing the loss of said circulation fluid upon resuming well drilling, completion or work-over operations.